AUDIO ELECTRONICS

# OWNER'S MANUAL

## Nighthawk

### Headphone Amplifier

NOTE: Before installing your new component, please read this manual carefully as it will inform you of the product specifications, proper installation and correct operating procedures for your unit. Also included in this manual are guidelines on how to service and care for your new Audio Electronics product.

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# IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** The triangle with the lightning flash symbol displayed on the unit advises the user of dangerous un-insulated voltage inside the product's enclosure.

**CAUTION:** To reduce the risk of electric shock, do not remove the cover. There are no user-serviceable parts inside; it is recommended that only qualified personnel service this component.

**ALERT:** The triangle with the exclamation point symbol on the component suggests that the owner refer to important operating and maintenance instructions in the owner's manual.

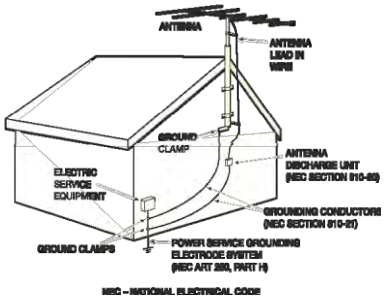
1. **OWNER'S MANUAL:** Before powering up the equipment, read all safety and operating instructions and follow them as instructed. Retain the safety and operating instructions for future reference.
2. **ATTACHMENTS:** Use only those attachments recommended by the unit manufacturer, as others may cause hazards.
3. **ACCESSORIES:** Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing injury to a person or damage to the unit. Mount the unit according to the manufacturer's instructions with the suggested mounting accessory.
4. **WALL OR CEILING MOUNTING:** Mount the unit to a wall or ceiling only in the manner recommended by the manufacturer.
5. **WATER AND MOISTURE:** Do not use the unit near water (for example, near a swimming pool, bath tub, wash bowl, kitchen sink, or laundry tub) or in a damp environment (like a basement or outside in the rain).
6. **OBJECT AND LIQUID ENTRY:** Do not push objects of any kind into the unit through openings as they could touch dangerous voltage points and short-out parts, possibly resulting in a fire or electric shock. Avoid spilling liquid of any kind on the unit. If water or any metal object (such as a paper clip, coin, or staple) accidentally falls inside the unit, disconnect it from the AC power source immediately and contact Cary Audio Design for further instructions.
7. **HEAT:** Position the unit away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.
8. **VENTILATION:** Slots and openings in the cabinet create ventilation to protect the component from overheating. These openings on the top and bottom panels must remain unobstructed. Allow at least 6 inches (16cm) of clearance above the unit and an opening behind the unit for airflow. Do not place the unit on a bed, sofa, rug, built- in bookcase, or rack without adequate ventilation.
9. **GROUNDING OR POLARIZATION:** As a safety feature, the unit may be equipped with a polarized alternating current line plug in which one blade is wider than the other. This plug will fit into the power outlet only one way. If you cannot insert the plug fully into the outlet, try reversing the plug. If the plug still will not fit, contact a licensed electrician to update your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
10. **POWER SOURCES:** Operate the unit only from the power source indicated on the marking label. If you are unsure of the type of power supplied to your home, consult your unit dealer or local power company.
11. **POWER CORD PROTECTION:** Arrange power supply cords so that they do not suffer from foot traffic or pinching by items placed on or against them. Pay close attention to cords where plug enter the AC outlet and where they exit from the unit.
12. **LIGHTNING:** For added protection during a lightning storm or when the component is idle for long periods of time, unplug the unit from the wall outlet and disconnect the antenna or cable system. This will help protect the unit from lightning and power line surge damage.
13. **POWER LINES:** Do not locate an outside antenna system in the vicinity of overhead power lines or other electric light or power circuits. When installing an outside antenna system, take extreme care to avoid touching the power lines or circuits; contact with them could be fatal.
14. **OVERLOADING:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this increases the risk of fire or electric shock.
15. **REPLACEMENT PARTS:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or those having the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock or other hazards.
16. **SAFETY CHECK:** Upon completion of any service or repairs to the unit, ask the service technician to perform safety checks to ensure the unit is in proper operating condition.

# IMPORTANT SAFETY INSTRUCTIONS

17. **IMPORTANT SAFETY NOTE:**
    - Before connecting a new product such as the Cinema 12 to your audio or home theater system, turn off all other equipment (preferably unplugging them from the AC power source). Many audio components feature automatic turn-on circuits that may activate during an installation, potentially causing damage to electronic components and/or speakers. This type of damage is not covered by product warranties, and Cary Audio specifically disclaims responsibility for any such damage.
    - **Power Cord:** The removable power cord provided with your unit was specifically designed for use with this product, but other AC cords may be used. Consult your dealer for advice on AC power cords and high quality wire in your system.

    - **AC Fuse:** The fuse is located inside the chassis and is not user serviceable. If the unit does not power up, contact an authorized service representative
    - **Wiring:** Cables running inside walls should have the appropriate markings to indicate compliance and listing by the UL, CSA or other standards required by the UL, CSA, NEC or your local building code. Questions about cables inside of walls should be referred to a qualified custom installer, a licensed electrician, or low-voltage contractor.
18. **RECORDING COPYRIGHT:** Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.
19. **NOTE TO CATV SYSTEM INSTALLER:** This reminder is provided to call the CATV system installer's attention to article 820-40 of the NEC, ANSI/NFPA 70, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.
20. **FCC INFORMATION FOR USER:**

    - **CAUTION:** Any changes or modifications not expressly approved by Cary Audio Design could void the user's authority to operate the equipment.
    - **NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules.
    - These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy, and if not installed and used in accordance with the instructions it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
        - Reorient or relocate the receiving antenna.
        - Increase the separation between the equipment and receiver.
        - Connect the equipment into an outlet on a circuit different from where the receiver is connected.
21. **OUTDOOR ANTENNA INSTALLATION/SAFE ANTENNA AND CABLE CONNECTION:**
    - If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded in order to provide protection against built-up static charges and voltage surges. Article 810 of the National Electrical Code, ANSI/NFPA 70 (in Canada, Part 1 of the Canadian Electrical Code) provides information regarding proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.


ANTENNA
ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC – NATIONAL ELECTRICAL CODE

    - Outside antenna system should be located well away from power lines, electric light or power circuits and where it will never come into contact with these power sources if it should happen to fall. When installing an outside antenna, extreme care should be taken to avoid touching power lines, circuits or other power sources as this could be fatal. Because of the hazards involved, antenna installation should be left to a professional.

# WELCOME

## THANK YOU

Thank you for purchasing the new Audio Electronics by Cary Audio Nighthawk Headphone Amplifier!

Cary Audio has a long history of providing the high-end community true audiophile sound quality with its award winning line of tube and solid state amplification and digital products for audio and cinema systems. Through Audio Electronics, Cary Audio's subsidiary originally created in 1993 and now re-launched, a new segment of music lovers is about to be wowed. While Cary Audio has an established reputation with the seasoned audiophile, Audio Electronics is positioned to reach a new generation of music fans with a smaller, sleeker design suited for the urban environment.

By providing a modern design and excellent sound quality in lower price-point products, Audio Electronics is promoting the future of the high-performance audio industry while preserving the heritage and integrity of the Cary Audio brand.

Thanks again for the support of our products.

# SPECIFICATIONS

The following section describes the Nighthawk's basic specifications. The specifications are subject to change without notice or obligation.

## BASIC SPECIFICATIONS

| | |
|---|---|
| **Input Impedance** | 50K ohms |
| **Gain** | 20dB |
| **Frequency Response** | 5Hz to 35 kHz (-1dB) |
| **Signal to Noise Ratio** | >90dB at 0dB gain |
| **THD** | <0.01% |
| **Channel Separation** | >70dB/10kHz |
| **Output Power** | 400mW/300 ohms, 600mW/30 ohms |
| **Output Impedance** | 5 ohms |
| **Full Regulated Power Supply** | Discrete regulators for audio circuits |
| **Audio Connectors** | 1 x phone jack |
| **RCA Connectors** | 4 x gold plated<br>1 set for input and other used as pass through |
| **Dimensions** | 14.5″ L X 8.5″ W X 4″ H |
| **Weight** | 10 lbs. |

# FEATURES

The following section describes the Nighthawk's basic features. The features are subject to change without notice or obligation.

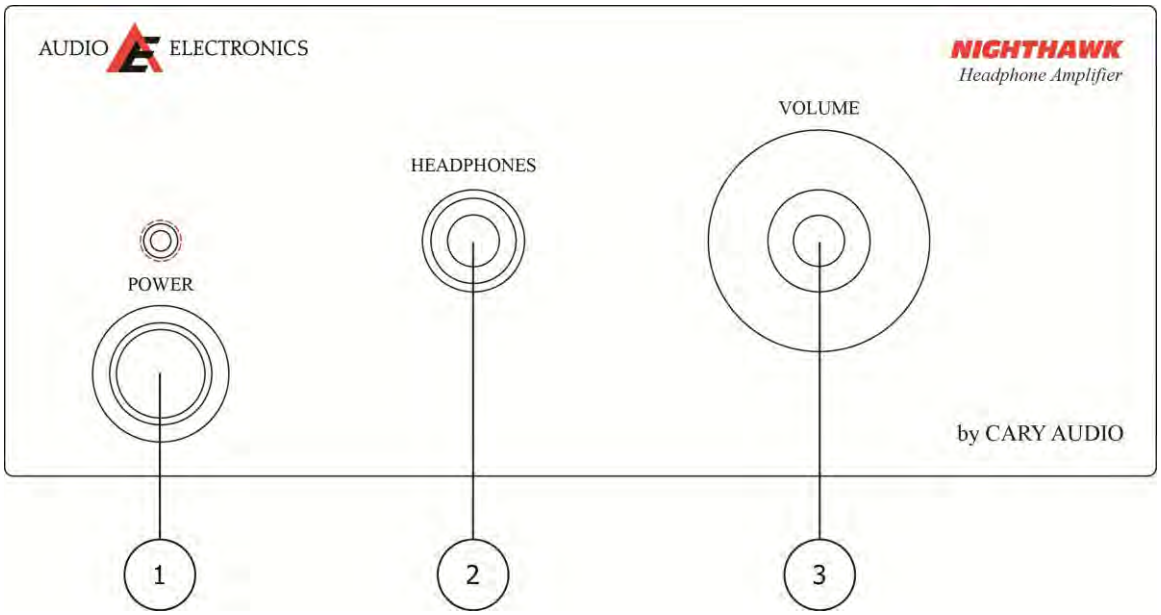
## PRODUCT FEATURES

The new Nighthawk solid-state headphone amplifier from Audio Electronics by Cary Audio is an all-new design, featuring top quality parts mounted on a heavy gauge fiberglass circuit board. A power transformer, rated at three times what is required for the amplifier's design, feeds a fully regulated discrete power supply for the best sound quality. Operating in Class A throughout, the Nighthawk's front end is a monolithic high-speed FET, which then goes to a fully complementary high-speed buffered output stage for extremely high linearity and low distortion, leading to musical accuracy. No global feedback is used in the design of the amplifier, and it is designed to drive headphones with an impedance between 20 and 600 ohms. A five second muting circuit prevents any annoying pops and clicks when turning on the Nighthawk headphone amplifier.

All of these design and construction features would be meaningless if they didn't contribute to both superb sound quality and long-term reliability. Like all Audio Electronics and Cary Audio equipment, the Nighthawk headphone amplifier is engineered to provide accurate and lifelike musical reproduction, and to do so for many years. The Nighthawk has beautiful cosmetics and contains the latest technology and quality components to ensure that you enjoy your music, whether used as a stand-alone system in an office or as part of a serious main music system.

# CONTROLS AND DISPLAYS

## FRONT PANEL




**1. POWER**

- Press once to turn the power ON. The power indicator will blink for five (5) seconds and then stay on at which point the unit is ready to operate.
- Press again to turn the power OFF.

**2. HEADPHONES**

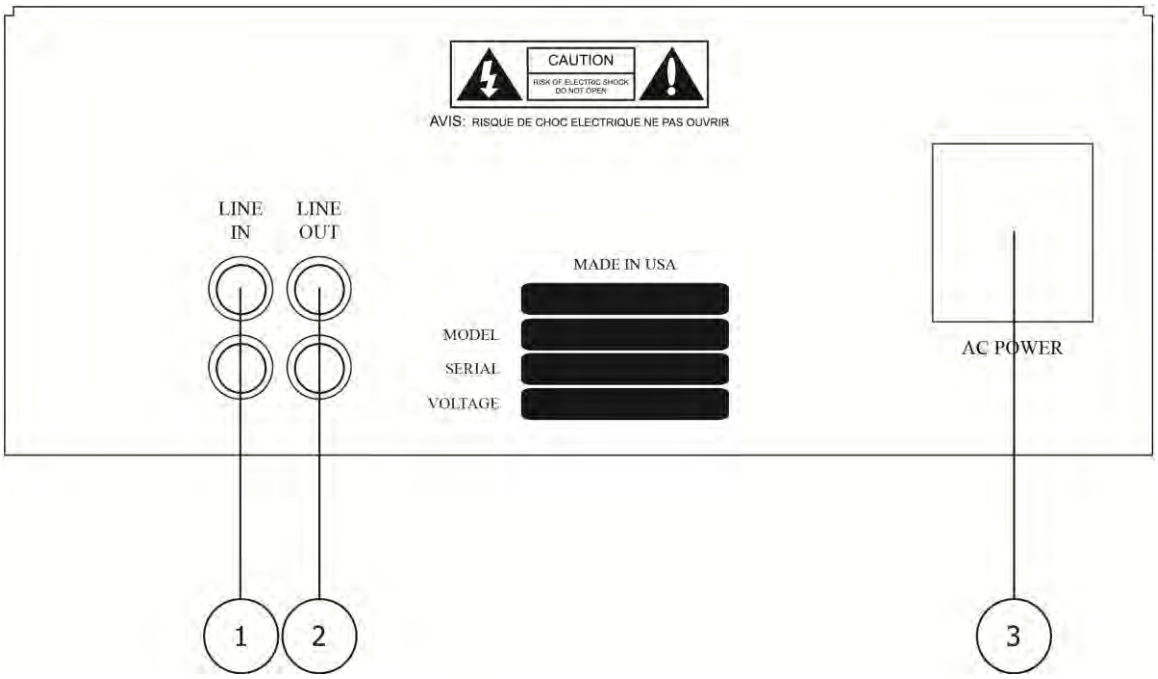
- Insert headphones into jack for use.

**3. VOLUME KNOB**

- Use this knob to adjust the overall volume level.

# OPERATION

## REAR PANEL




**1. LINE IN**

- This input accepts any line level input from sources such as CD players, tuners, phono amplifiers, or fixed outputs such as a preamplifier or receiver (i.e. tape output).

**2. LINE OUT**

- The line out socket passes on the line input, which is directly connected to the line input and can be used to connect to a recording device or a preamplifier or receiver. This output is fixed and is not affected by the volume control.

**CAUTION:**

- Connecting the RCA output of the Nighthawk Amplifier directly to a power amplifier's input may result in damage to the power amplifier and/or connected speakers.

**3. AC POWER**

- Attach the correct power cord for country of use. This should be supplied with the unit.

# INSTALLATION

## UNPACKING

This section describes the proper unpacking and installation procedures for your new component.

### Unpacking

All Audio Electronics shipping cartons have been specially designed to protect their contents and special care has been taken to prevent damage under normal shipping conditions. Mishandling should be evident upon inspection of the shipping container. If shipping damage is found after visual inspection, take care not to destroy the evidence. If necessary, document the damage with photographs and contact the transport carrier immediately.

Carefully remove your new component from its packing carton and examine it closely for signs of shipping damage. We strongly recommend saving all original packing cartons to protect your component from damage should you wish to store it or ship it at a later date.

### In the Box

When unpacking your Nighthawk Headphone Amplifier, make sure the following accessories are included. You should find the following items within the box:

- Power Cable
- Owner's Manual
- Warranty Card

## WARRANTY CARD

**IN THE USA:** If you are the original purchaser of a new unit purchased directly from Audio Electronics or an authorized Audio Electronics dealer, please fill out the enclosed warranty registration card and return it to Audio Electronics within 15 days of your purchase. Audio Electronics also suggests that you keep your original packing cartons in case you ever need to ship the unit. Warranty restrictions apply. Consult the warranty section at the end of this manual for details. Please be certain to keep a copy of the original sales receipt from your direct purchase from Audio Electronics or your authorized Audio Electronics dealer to validate the warranty if ever needed. The warranty is for the original purchaser only and does not transfer to any subsequent owner.

**OUTSIDE THE USA:** Your local Authorized Audio Electronics Distributor will make his own warranty policy for your country. Please check with them for the terms of warranty for your new amplifier.

## PLACEMENT

In general, the location of your new Nighthawk Headphone Amplifier is not critical. Certain precautions must be taken to ensure optimum performance. Avoid extremely hot locations such as near radiator or other heating units. Keep the top of the Nighthawk clear of books, paper or other equipment to protect against overheating.

# OPERATION

## CONNECTIONS

### SINGLE SOURCE

The Audio Electronics Nighthawk Headphone Amplifier is primarily intended as a single source amplifier.

- **RCA line level source** (See FIGURE 1 & 2 below).
  Connecting the line level RCA audio outputs of a CD player or other line level source to the inputs of the Nighthawk Headphone for output. This Should ONLY be done using the source's fixed output. It is NOT recommended to use a source's variable output. Doing so could accidently result in supplying too much gain to the input of the Nighthawk Headphone amplifier whereby causing damage to it and/or any connected headphones.

### MULTIPLE SOURCES

There are a couple of ways to connect the Audio Electronics Nighthawk Headphone Amplifier for listening to multiple sources.

- **Preamplifier of a Main Audio System** (See FIGURE 3 below).
  To do this, your main system preamplifier must have a set of line level RCA Record (Tape) outputs. Do NOT use a standard set of variable preamplifier outputs as this could result in damage to the Nighthawk Headphone Amplifier and or connected headphones.

  By connecting this output (tape output) to the input of the Nighthawk, any source you have selected on the preamplifiers record or tape output will be outputted to the input of the Nighthawk. This type of output is typically a fixed output whereby eliminating the need to use the main system preamplifier volume control. To control the volume you only need to use the volume control of the Nighthawk Headphone Amplifier.

- **Digital to Analog Converter** (See FIGURE 4 below).
  Connecting the line level RCA analog output of a digital to analog converter to the RCA input on the Nighthawk Headphone Amplifier can allow for multiple source listening, depending on the capabilities of the DAC. By simply changing the selected source of the DAC will change the source sent to the input on the Nighthawk.

- **Separate Analog Source Selector or Headphone Preamplifier:** Usually a part of a dedicated headphone listening system. (See FIGURE 4 below).
  Connecting such a device in front of the Nighthawk will allow for switching of multiple connected sources. To do this, connect the source selector or headphone preamplifier line level RCA output to the RCA input of the Nighthawk. Simply changing sources on the analog source selector or headphone preamplifier will facilitate multiple source listening.

# OPERATION

**OUTPUT**

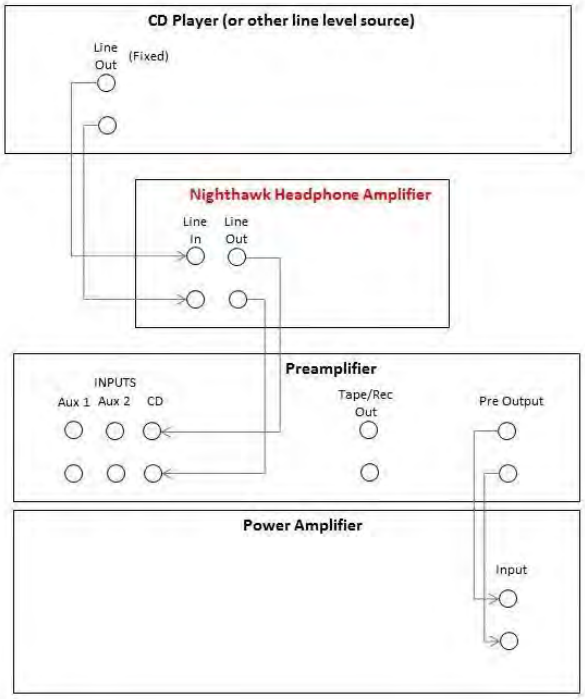
The Nighthawk Headphone Amplifier is designed with a single pair of FIXED line level RCA outputs. The purpose of this fixed output is to send the signal of the Nighthawk Headphone Amplifier to either a preamplifier or an integrated amplifier. It is NOT intended to be connected to the input of a power amplifier.

**CAUTION:**

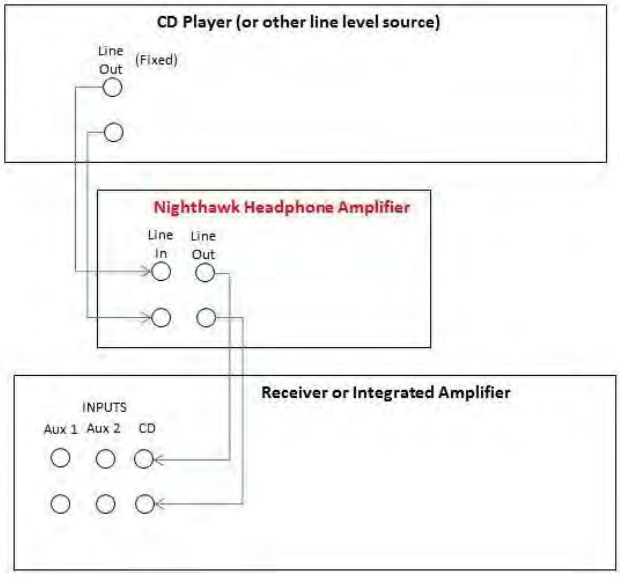
- Connecting the RCA output of the Nighthawk Amplifier directly to a power amplifier's input may result in damage to the power amplifier and/or connected speakers.

# DIAGRAMS

Single Source with Preamplifier Configuration. (FIGURE 1)

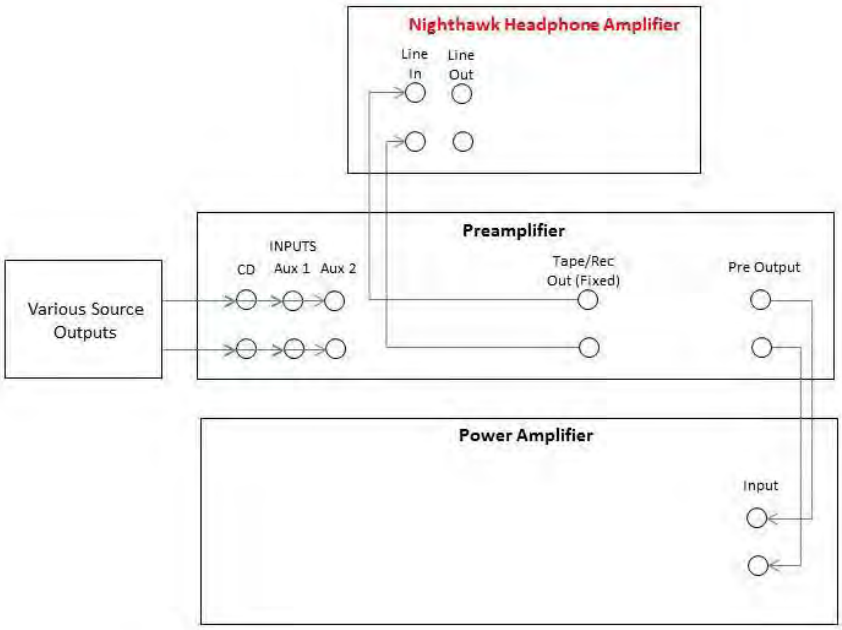



Single Source with Receiver or Integrated Amplifier Configuration. (FIGURE 2)

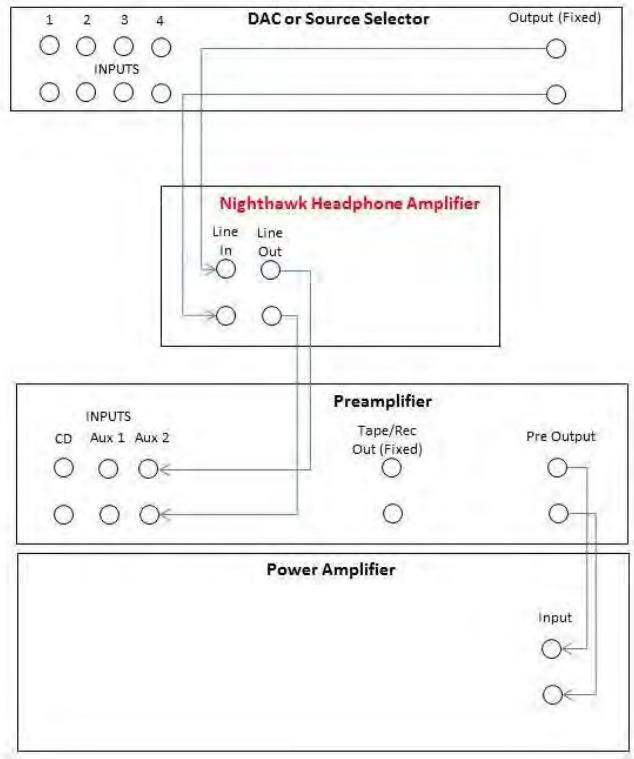


# DIAGRAMS

Multiple Sources with Preamplifier Configuration. (FIGURE 3)




Multiple Sources with DAC or Source Selector Configuration. (FIGURE 4)



# SERVICE AND CARE

## CARE AND CLEANING

The cabinet housing and front panel of the Nighthawk may be cleaned with a soft cloth and Windex or a window cleaner. The frequency of cleaning will be governed by how many hours the Nighthawk is operated and by operating environment cleanliness.

**CAUTION:**

- Do not let any liquids spill into the vents on top of the unit.

## FACTORY SERVICE

Careful consideration has been given to the design of your Nighthawk Headphone Amplifier to keep maintenance problems to a minimum. Any problems or requests for service should be referred to our Customer Service Department at 919-355-0010. **DO NOT** return the Nighthawk to the factory without a Return Merchandise Authorization (RMA) number from the Customer Service Department.

Audio Electronics will assume no responsibility if the shipping company refuses to pay for damage due to your improper packing or lack of insurance should the unit be lost or damaged in shipment. Please retain and always use the original shipping carton for shipping the player. Also, Audio Electronics reserves the right to return products sent in for service in a new box set at the customer's expense if the original packing material was damaged in the initial shipment, or if it is deemed unsatisfactory to use in return shipping.

## NON-WARRANTY REPAIRS

Audio Electronics will provide repair service for its products charging on a time and expense basis. At this time, the standard non-warranty service bench fee is $125, with all parts used for repair charged extra. This may change and is not a quote for service. Please call us at 919-355-0010 for more information about out-of-warranty service and repair fees.

**CAUTION:**

- Never remove or insert the back panel AC plug when the unit is on or the AC cord is plugged into the wall.

# LIMITED WARRANTY

**Audio Electronics Warrants to the Original Purchaser for the Following Audio Electronics Products for the Periods Indicated:**

1. Power Amplifiers, Integrated Amplifiers, Preamplifiers, and Digital to Analog Convertors (DAC) have a one (1) year parts and labor warranty from the date of the original purchase from Audio Electronics.
2. Vacuum tubes, if any are used in the component, are offered a 90-day exchange policy against defects with the exception of the CAVT 300B vacuum tube that has a one (1) year exchange policy from the date of the original purchase from Audio Electronics.

**What is Covered and What is Not Covered**

Except as specified below, this warranty covers parts and labor to correct all defects in materials and workmanship. The following are not covered by the warranty:

1. Damage, deterioration, malfunction or failure to meet performance specifications resulting from:
    a. Accident, acts of nature, misuse, abuse, neglect or unauthorized product modifications
    b. Improper installation, removal or maintenance, or failure to follow instructions supplied with the product.
    c. Repair or attempted repair by anyone not authorized by Audio Electronics to repair the product.
    d. Any shipment of the product (claims must be presented to the carrier).
    e. Any cause other than a product defect.
2. Cleaning, initial set-up, check-ups with no defects found, or charges incurred for installation, removal or reinstallation of the product.
3. Any product, on which the serial number has been defaced, modified or removed.
4. Batteries.
5. Accessories, including but not limited to, batteries, cables, mounting hardware and brackets, cleaning accessories, antenna and detachable power cords.
6. Warranty is void if purchase was made from anyone other than an authorized Audio Electronics dealer.

**Who May Enforce the Warranty?**

This warranty extends to products purchased directly from Audio Electronics or an authorized Audio Electronics dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

To obtain such warranty service, the original purchaser must complete and send in the Warranty Registration Card within 15 days of purchase.

# LIMITED WARRANTY

### What Will We Pay For?

We will pay for all labor and material expenses for items covered by the warranty. Payment of shipping charges is discussed in the next section of this warranty.

### How Can You Get Service?

In the event that the owner needs to return the unit to Audio Electronics for service or repair of a possible defect, he must follow the following steps:

1. Contact Audio Electronics at 919-355-0010 to obtain a Return Merchandise Authorization (RMA) number prior to shipping; include this number with the package
2. Submit a copy of the original sales receipt; blank receipts will not validate the limited warranty for service by Audio Electronics. The original sales receipt must contain the following information:
    a. The authorized Audio Electronics dealer's name
    b. The date of purchase
    c. The unit's sales price
    d. The buyer's name and address
    e. Describe in detail the problem.
    f. Note the unit's model number and serial number.
3. Deliver by either of these methods:
    a. With all freight and insurance charges prepaid and in its original packing container or equivalent, ship the component to Audio Electronics, 1020 Goodworth Drive Apex, NC 27539.
    b. Hand-deliver the product to Audio Electronics (address noted above) or the nearest authorized service facility.

### Limitation of Implied Warranties

All implied warranties, including warranties of merchantability and fitness for particular purchase, are limited in duration to the length of this warranty.

### Exclusion of Damages

Audio Electronics liability for any defective product is limited to repair or replacement of the product at Audio Electronics option. Audio Electronics shall not be liable for damage to other products caused by any defects in Audio Electronics products, damages based upon inconvenience or loss of use of the product, or any other damages, whether incidental, consequential, or otherwise.

# LIMITED WARRANTY

### How State Law Relates to the Warranty

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### International Purchasers (Export Markets)

Audio Electronics warrants its merchandise to purchasers within the United States exclusively for use within the United States. It provides no other warranties, expressed or implied. If you are living outside of the United States, please consult your local dealer or distributor to determine the details of your local warranty.

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